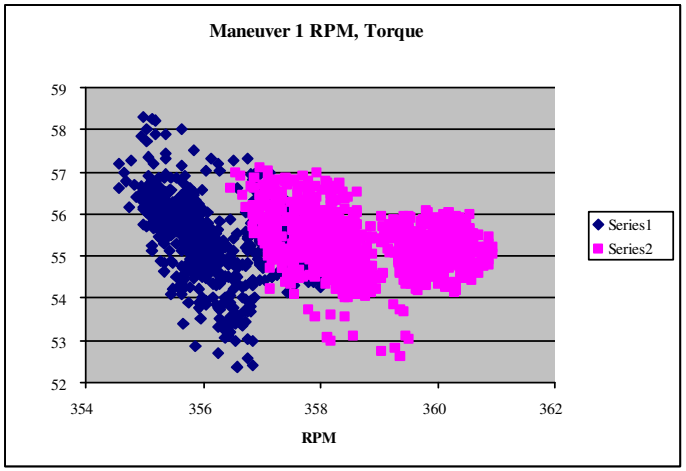
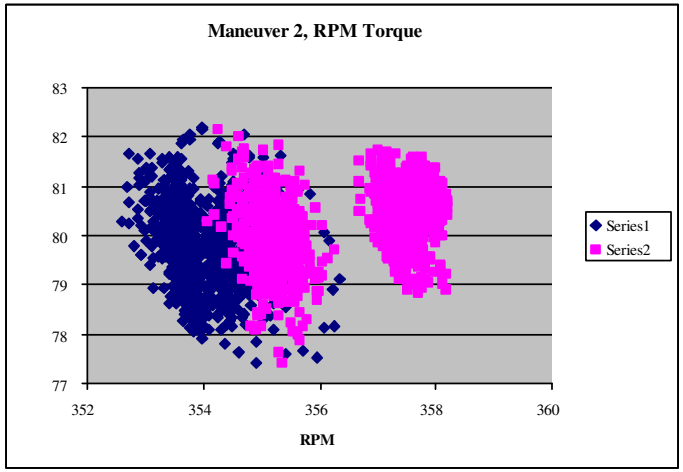
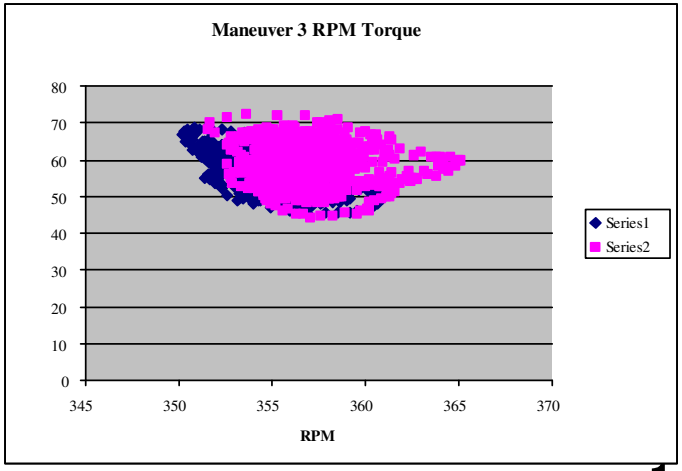
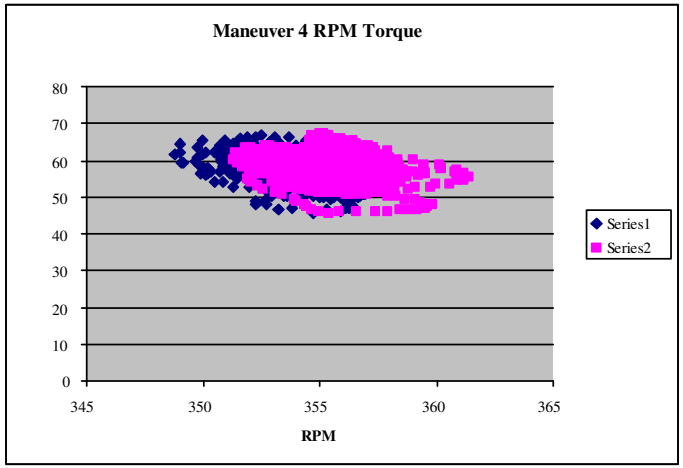
Machine Learning Example: Modeling Usage Variations

Clustering of vibration (RMS) data based on pilots and different flights
(series 1: pilot 1; series 2: pilot 2)





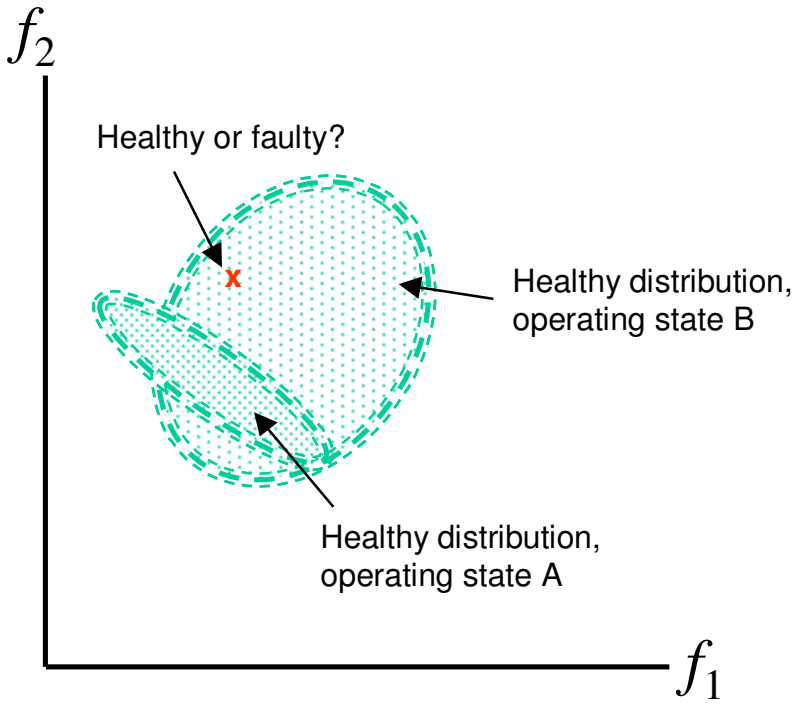




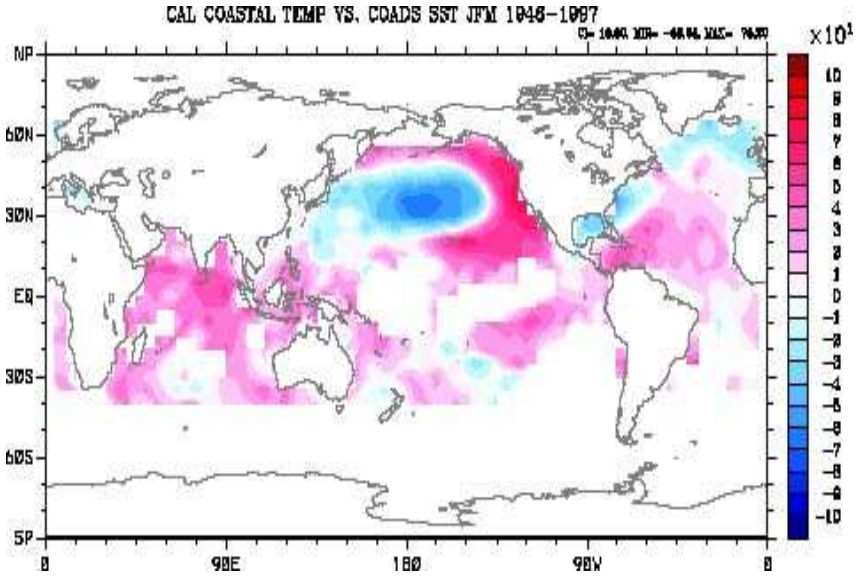
Machine Learning Example: Anomaly Detection

Problem:

- Outlier detection requires accurate density models of healthy baseline
- Accurate model captures characteristics of healthy (non-stationary) operating states
  - Should lower false alarm rate
  - Should raise detection rate
- If operating state is known, robust fault detection should be possible



Technical Approach - Questions Answered



Knowledge Discovery for Understanding and Analysis

"How and Why" is

more important than "optimal".

- Capability to interactively exploit and interrogate distributed scientific databases.
- Frameworks and data semantics for linking methods supporting interactive knowledge discovery.
- Techniques for capturing and exploiting expert knowledge